

In The Claims

Kindly enter the claim amendments, without prejudice, as set forth below. A complete listing of the claims is provided.

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CLAIMS

1. A reeling device for rolled material placed downstream of a rolling line, comprising at least one first guide element and one second guide element, each of them defining a passage designed to support, contain and guide said rolled material, where the first  
10 guide element is designed at least to rotate about an axis that is substantially normal to its own plane of lie and comprises one input end adapted to receive said rolled material coming off said rolling line, and one output end from which said rolled material may come out, and where the second guide element comprises one input end, set in the proximity of said output end of said first guide element, within which it is  
15 possible to introduce the rolled material that has come out of the first guide element, and one output end, from which said rolled material may come out towards winding means for winding the rolled material in turns, said winding means defining a winding axis, and in which said first guide element and said second guide element are designed to vary their own inclination with respect to said winding axis  
20 independently of one another at least according to a plane parallel to the axis .
2. The device according to Claim 1, wherein the winding means comprise a spindle of a reel.
3. The device according to Claim 2, comprising orientation means of the second guide element so as to maintain the stretch of said rolled material coming out of said output  
25 end of said second guide element substantially with the same inclination as that of the last turn wound on said spindle according to a plane parallel to the winding axis of said turns.
4. The device according to Claim 3, wherein there are provided at least one first mobile support and one second mobile support suitable to translate in the direction parallel to  
30 the winding axis, and said second guide element is supported by said second mobile support substantially in the proximity of or in a position corresponding to said output

end thereof, and is supported by said first mobile support substantially in the proximity of or in a position corresponding to said input end thereof, and said first guide element is supported by said first mobile support substantially in the proximity of or in a position corresponding to said output end thereof.

5 5. The device according to Claim 4, wherein said second mobile support is provided with means designed to raise and lower the second guide element .

6. The device according to Claim 1, further comprising a device for guiding the rolled material, having a space for passage, set downstream of said output end of said second guide element and suitable to be traversed by said rolled material, at least four rolls, arranged in pairs at both sides of said space for passage, at least four rotating  
10 connecting rods, on each of which one of said rolls is fixed in such a way that said connecting rods by rotating are designed to move said rolls closer together and further away from one another at the sides of said rolled material when it passes through said space or gap and control and actuation means designed to control and vary the position  
15 of said rolls at least in the horizontal direction so as to contain and guide laterally said rolled material.

7. The device according to Claim 5, further comprising a device for guiding the rolled material, having a space for passage, set downstream of said output end of said second guide element and suitable to be traversed by said rolled material, at least four rolls, arranged in pairs at both sides of said space for passage, at least four rotating  
20 connecting rods, on each of which one of said rolls is fixed in such a way that said connecting rods by rotating are designed to move said rolls closer together and further away from one another at the sides of said rolled material when it passes through said space or gap and control and actuation means designed to control and vary the position  
25 of said rolls at least in the horizontal direction so as to contain and guide laterally said rolled material.

8. The device according to Claim 6, wherein the device for guiding the rolled material comprises an idler roller, which has a function of guiding in a vertical direction the rolled material at output from the second guide element.

30 9. A method for reeling rolled material by means of a reeling device according to claim 1, wherein there are defined a winding axis and a rolling axis, and the first guide element

and the second guide element vary their respective inclination with respect to the winding axis independently of one another, comprising the operation of displacing the output end of said second guide element along said means for winding rolled material in turns, by causing the first guide element to rotate at least about an axis

5 substantially normal to its own plane of lie and maintaining said second guide element with an inclination, on a first plane parallel to the winding axis, wherein the stretch of rolled material coming out of said output end of said second guide element has an angle of distribution, in said first plane substantially equal to the angle of the helix of the turns of the layer being wound, wherein the angle of the helix is inclined with  
10 respect to the rolling axis and the second guide element varies its inclination with respect to the winding axis during reeling.

10. The method according to Claim 9, wherein the first guide element is made to rotate at least about said axis substantially normal to its own plane of lie as long as said output end of said first guide element is within a region of space substantially delimited by  
15 two end surfaces, each of which is orthogonal to the axis of the winding means and passes in a position corresponding to one end of said winding means.

11. The method according to Claim 9, wherein said rotation of said first guide element about said axis substantially normal to its own plane of lie is stopped when said output end of said first guide element reaches one of said end surfaces and wherein said  
20 second guide element is made to rotate subsequently about an axis substantially normal to its own plane of lie at least until the output end of said second guide element substantially reaches one end of said winding means.

12. The method according to Claim 10, wherein said second guide element raises during winding so as to follow the increase in diameter of the reel.

25 13. The method according to Claim 11, wherein said second guide element raises during winding so as to follow the increase in diameter of the reel.

14. The method according to Claim 12, wherein an operation of control of the position of the rolls of said guide device is carried out for guiding the rolled material so as to maintain substantially a gap not less than a predetermined value between said rolls and  
30 the sides of said rolled material.